PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re Application of:
Suzuki, et al

Confirmation No. 9403

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Group Art Unit: 2871

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Examiner: Duong, Thoi V.

For: **Optical Film and Liquid Crystal Display Device Using the Film**

TKHR Ref. 250129-1030

RESPONSE TO NOTICE OF NON-COMPLIANT APPEAL BRIEF

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

This submission is made in response to the Notice of Non-Compliant Appeal Brief mailed on September 15, 2009. NOTE: the undersigned has also mailed an Amendment after Appeal, which amendment was mailed in response to a request from the Examiner. Specifically, the Examiner indicated that he and his supervisor had reconsidered the last rejection, and were going to allow this application. Therefore, the Appeal Brief should be rendered moot. However, after contacting the Examiner about this, the undersigned was informed by the Examiner that a response to the Notice of Non-Compliant Appeal Brief would be required, before the Examiner could act to allow this application. Accordingly, this submission is being made.

In this regard, this submission is made to supply a statement of the status of the claims, and to identify the appealed claims.

III. Status of Claims

All claims 1, 3-7, 13, 15-19, and 42-50 (pending at the time of the appeal) stand rejected based on a defective reissue declaration. Therefore, all of these claims are subject to this appeal.

IV. Status of Amendments

An amendment was filed (electronically) on September 22, 2009. That amendment was made at the request of the Examiner, and embodied a minor amendment to claim 3, as well as the cancellation of claims 19, 45, and 47.

V. Summary of Claimed Subject Matter

The claimed inventions are summarized below with reference numerals and references to the written description ("specification") and drawings. The subject matter described in the following appears in the original disclosure at least where indicated, and may further appear in other places within the original disclosure. Note: since no substantive rejections have been made, such that no claims are being argued in this appeal brief, it is not believed that any summary of claimed subject matter is required.

Embodiments of the present invention, such as that define by claim 1, define a liquid crystal display device (Fig. 1) including a liquid crystal display (reference number 1, col. 3, lines 66-67) panel and a back light device (reference number 6, col. 3, lines

66-67), said back light device comprising: a light source for emitting light (reference number 7, col. 4, line 7); a light guide means (reference number 8, col. 4, line 8) having a top surface facing a back surface of said liquid crystal display panel and a side surface receiving said light from said light source; a reflector means (Fig. 2, col. 4, line 11) provided on a back surface of said light guide means; and an optical film (reference number 9, col. 4, line 8) of transparent material positioned between said back surface of said liquid crystal display panel and said top surface of said light guide means, including a first surface having a wave structure including a plurality of regularly spaced isosceles triangles prisms arranged side-by-side (col. 4, lines 46-50), the prisms having smooth surfaces, and a second surfacing having an optically rough structure for performing diffuse transmissions (col. 4, lines 56-59), wherein a top angle of said isosceles triangle prisms is in a range of 95 degrees to 120 degrees for flat (col. 5, lines 33-35), angles prisms surfaces to gather light from the diffuse transmission into a desired viewing angle for the liquid crystal display panel, wherein a polarizer is positioned between said liquid crystal display panel and said optical film (col. 3, lines 9-10), and a direction along which said peaks and valleys of said isosceles triangle prisms are oriented is aligned in parallel to a polarizing axis of said polarizer and the tops of the isosceles triangle prisms are not farther than 160 μm apart (col. 8, lines 4-10).

Embodiments of the present invention, such as that define by claim 3, define a liquid crystal display device (Fig. 1) including a liquid crystal display (reference number 1, col. 3, lines 66-67) panel and a back light device (reference number 6, col. 3, lines 66-67), said back light device comprising: a light source for emitting light (reference number 7, col. 4, line 7); a light guide means (reference number 8, col. 4, lines 8) having a top surface facing a back surface of said liquid crystal display panel and a side surface receiving said light from said light

source; a reflector means (Fig. 2, col. 4, line 11) provided on a back surface of said light guide means; and two optical films (reference numbers 9 and 10, col. 6, line 35) of transparent material positioned between said back surface of said liquid crystal display and said top surface of said light guide means, each of said optical films including a first surface having a wave structure including a plurality of isosceles triangle prisms arranged side-by-side (col. 4, lines 46-50), the prism having smooth surfaces, and a second surface having an optically rough structure for performing diffuse transmission (col. 4, lines 56-59) wherein a top angle of said isosceles triangle prisms is in a range of 95 degrees to 120 degrees for flat (col. 5, lines 33-35), angles prism surfaces to gather light from the diffuse transmission by the second surface into a desired viewing angle for the liquid crystal display panel.

Embodiments of the present invention, such as that define by claim 6, define a liquid crystal display device (Fig. 1) including a liquid crystal display (reference number 1, col. 3, lines 66-67) panel and a back light device (reference number 6, col. 3, lines 66-67), said back light device comprising: a light source for emitting light (reference number 7, col. 4, line 7); a light guide means (reference number 8, col. 4, line 8) having a top surface facing a back surface of said light crystal display panel and a side surface receiving said light from said light source; a reflector means (Fig. 2, col. 4, line 11) provided on a back surface of said light guide means; and an optical film (reference number 9, col. 4, line 8) of transparent material positioned between said liquid crystal display panel and said light guide means, including a first surface having a structure including a plurality of quadrangular prisms, which are substantially the same size and shape, in an orderly matrix of equally spaced prisms (col. 6, lines 26-34), the prisms having smooth surfaces, and a second surface having an optically rough structure for performing diffuse transmission wherein a top angle of said quadrangular prisms is in a range of 95 degrees to 120 degrees for flat, angles sides of the prisms to gather the light from the diffuse transmission of the second surface into the desired viewing angle for the liquid crystal display device, wherein a polarizer (reference number 5, col. 5, line 26) is positioned between said

liquid crystal display panel and said optical film, and a direction along which said peaks and valleys of said quadrangular prisms are oriented is aligned in parallel to a polarizing axis of said polarizer.

Embodiments of the present invention, such as that define by claim 13, a liquid crystal display device (Fig. 1) including a liquid crystal display panel and a back light device, said back light device comprising: a light source for emitting light (reference number 7, col. 4, line 8); a light guide (reference number 8, col. 4, line 8) having a top surface facing a back surface of said display panel and a side surface receiving said light from said light source; a reflector (Fig. 2, col. 4, line 11) provided on a back surface of said light guide; and an optical film (reference number 9, col. 4, line 8) of light transparent material positioned between said back surface of said liquid crystal display panel and said top surface of said light guide, said optical film including a first surface having an optically rough structure for diffuse-transmitting (col. 4, lines 56-59) said light from said light guide and a second surface having a wave structure including a plurality of isosceles triangle prisms arranged side-by-side, the prisms having smooth surfaces for refracting said light diffuse-transmitted from said first surface to gather light passing through said second surface in a direction toward said display panel, wherein a top angle of said isosceles triangle prisms of said optical film is in a range of about 90 degrees to about 120 degrees for flat (col. 5, lines 33-35), angles prism surfaces to gather light from the diffuse transmission and directionally distribute said light within a range defined by a given angle, wherein a polarizer (reference number 5, col. 5, line 26) is positioned between said liquid crystal display panel and said optical film (col. 3, lines 9-10), and a direction along which said peaks and valleys of said isosceles triangle prisms are oriented is aligned in parallel to a polarizing axis of said polarizer and the tops of the isosceles triangle prisms are not farther than 160 μm apart (col. 8, lines 4-10).

Embodiments of the present invention, such as that define by claim 42, an optical film (reference number 9, col. 4, line 8) of light transparent material including a first surface having

an optically rough structure for diffuse-transmitting incident light and a second surface having a wave structure including a plurality of isosceles triangle prisms arranged side-by-side (col. 4, lines 46-50), the prisms having smooth surfaces for refracting said light diffuse-transmitted (col. 4, lines 56-59) from said first surface and directionally distributing said diffuse-transmitted light through said second surface for increasing illumination within a viewing angle of about 35 degrees in the vertical direction and about 55 degrees in the horizontal direction wherein a top angle of said isosceles triangle prisms is a range of about 90 degrees to about 120 degrees (col. 5, lines 33-35), wherein a polarizer (reference number 5, col. 5, lines 26) is positioned between a liquid crystal display panel and said optical film (col. 3, lines 9-10), and a direction along which at least a portion of peaks and valleys of said isosceles triangle prisms are oriented is aligned in parallel to a polarizing axis of said polarizer and the tops of the isosceles triangle prisms are not farther than 160 μm apart (col. 8, lines 4-10).

Embodiments of the present invention, such as that define by claim 43, an optical film (reference number 9, col. 4, line 8) of light transparent material including a first surface having an optically rough structure for diffuse-transmitting (col. 4, lines 56-59) incident light and a second surface having a wave structure including a plurality of isosceles triangle prisms arranged side-by-side, the prisms having smooth surfaces for refracting said light diffuse-transmitted from said first surface and directionally distributing said diffuse-transmitted light through said second surface wherein a top angle of said isosceles triangle prisms is in a range of about 90 degrees to about 120 degrees (col. 5, lines 33-35), wherein the tops of the isosceles triangle prisms are no more than 160 μm apart, and wherein a polarizer (reference number 5, col. 5, line 26) is positioned between a liquid crystal display panel and said optical film (col. 3, lines 9-10), and a direction along which at least a portion of peaks and valleys of said isosceles triangle prisms are oriented is aligned in parallel to a polarizing axis of said polarizer.

Embodiments of the present invention, such as that define by claim 46, define an optical film (reference number 9 col. 4 line 8 or use in a liquid crystal display (reference number 1, col. 3, lines 66-67) having a front portion and a back portion, said optical film comprising: diffusing means (reference number 9 col. 4 line 8 including an optically rough structure on a first surface of said film for diffuse-transmitting light illuminated proximal to said back portion of said display (col. 4 lines 5659 and refracting means on a second surface of said film including a plurality of isosceles triangle prisms arranged side-by-side for directionally distributing said diffuse-transmitted light toward said front portion of said display and for increasing luminance of light within a viewing angle of about 35 degrees in the vertical direction and about 55 degrees in the horizontal direction of said front portion of said display, wherein a top angle of said isosceles triangle prisms is in a range of about 90 degrees to about 120 degrees (col. 5 lines 33-35), wherein a polarizer (reference number 5, col. 5, lines 26) is positioned between said liquid crystal display panel and said optical film (col. 3, lines 9-10), and a direction along which at least a portion of peaks and valleys of said isosceles triangle prisms are oriented is aligned in parallel to a polarizing axis of said polarizer and the tops of the isosceles triangle prisms are not farther than 160 μm apart (col. 8, lines 4-10).

Embodiments of the present invention, such as that define by claim 49, define a film (reference number 9, col. 4, line 8) for use in an optical system comprising a light source (reference number 7, col. 4, line 7) and a polarizer (reference number 5, col. 5, line 26) having a polarization axis, the film comprising a transparent material including a first surface and a second surface, said first surface having a structure including a plurality of isosceles triangular prisms arranged side-by-side (col. 4, lines 46-50) for increasing luminance of light passing through said film in a direction corresponding to said polarization axis of said polarizer, and said second surface having an optically rough structure for diffuse transmitting light emitted by said light source, wherein a top angle of said isosceles triangle prisms is in a range of about 90 degrees to about 120 degrees

(col. 5, lines 33-35), wherein the tops of the isosceles triangle prisms are no more than 160 μm apart (col. 8, lines 4-10), and wherein said polarizer is positioned between a liquid crystal display panel and said film (col. 3, lines 9-10), and a direction along which at least a portion of peaks and valleys of said isosceles triangle prisms are oriented is aligned in parallel to a polarizing axis of said polarizer.

In view of the foregoing, the appeal is now in condition for consideration. As previously noted, however, this appeal SHOULD be rendered moot by the amendment filed (at the request of the Examiner) on September 22, 2009.

No fee is believed to be due in connection with this submission. If, however, any fee is deemed to be payable, you are hereby authorized to charge any such fee to deposit account 20-0778.

Respectfully submitted,

/Daniel R. McClure/

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